

8-8: Solving Equations with Radicals

Warmup: Solve. Round to the nearest thousandth.

1. $x^{\frac{3}{4}} = 5$

2. $y^{\frac{2}{3}} + 2 = 5$

We saw: $\sqrt{x} = 5 \rightarrow (\sqrt{x})^2 = 5^2 \rightarrow x = 25$

Does this idea work with other roots?

Extraneous Solutions:

Example 1: Solve.

a. $\sqrt[3]{x} + 2 = 9$

b. $5\sqrt{3x+1} = 80$

c. $5 - \sqrt[6]{t} = 734$

Example 2: Find the two points on the line $x = 40$ that are 50 units away from $(1, 2)$.

Example 3: Solve $\sqrt[3]{9(y-9)^4} = 2304$. Assume $y > 4$.

Homework:

"Courage is saying, 'Maybe what I'm doing isn't working; maybe I should try something else.'" - Anna Lappe